

Notice of Allowability

Application No.

10/699,583

Applicant(s)

NEUBELT ET AL.

Examiner

Dalzid Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 31 October 2003.
2. ☒ The allowed claim(s) is/are 1-9 which have been renumbered as 1-9 respectively.
3. ☒ The drawings filed on 29 March 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ms. Keum J. Park on August 17, 2004.

The application has been amended as follows:

In the specification, page 2, paragraph 5, line 4, numerical reference "107" has been changed to --- 108 ---.

In the specification, page 5, paragraph 16, line 7, "FIG. 3" has been changed to --- FIG. 2 ---.

In the specification, page 6, paragraph 19, line 4, "OTCR" has been changed to --- OTDR ---.

2. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: Fig. 1 has been labeled as PRIOR ART.

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

REASONS FOR ALLOWANCE

3. Claims 1-9 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Claim 1 is allowable because the prior art of record, patent number 6,028,684 to Kidorf, does not teach or fairly disclose a method of using optical time domain reflectometry (OTDR) with a WDM transmission system that includes a plurality of terminals interconnected by at least two pairs of unidirectional optical transmission paths comprising the step of:

coupling the optical probe signal from the first optical path in the first optical path pair to a second optical path in the second optical path pair, said first optical path in the first optical path pair supporting optical signals traveling in a direction opposite to optical signals supported by the second optical path in the second optical path pair;

receiving over a first optical path in the second optical path pair a second returned OTDR signal in which status information concerning the second optical path in the second optical path pair is embodied, said second returned OTDR signal traversing a repeater located in the second optical path pair; and

coupling the second returned OTDR signal from the first optical path in the second optical path pair to the second optical path in the first optical path pair so that the second OTDR signal is returned to the first OTDR unit, said first optical path in the second optical path pair supporting optical signals traveling in a direction opposite to optical signals supported by the second optical path in the

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first optical path pair.

Claim 6 is allowable because the prior art of record, patent number 6,028,684 to Kidorf, does not teach or fairly disclose first and second terminals interconnected by at least first and second unidirectional optical transmission path pairs comprising:

- a second OTDR unit associated with the first terminal transmitting a second optical probe signal over a first optical path in the second optical path pair and receiving returned OTDR signals in which status information concerning the first optical path in the second optical path pair and a second optical path in the first optical path pair, said first optical path in the second optical path pair supporting optical signals traveling in a direction opposite to optical signals supported by the second optical path in the first optical path pair;

- a third optical path optically coupling the first optical path in the first optical path pair to the second optical path in the second optical path pair for communicating therebetween the first optical probe signal and the returned OTDR signals in which status information concerning the first optical path in the second optical path pair; and

- a fourth optical path optically coupling the second optical path in the first optical path pair to the first optical path in the second optical path pair for communicating therebetween the second optical probe signal and the returned OTDR signals in which status information concerning the second optical path in the second optical path pair.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohta et al (US Patent No. 5,737,105) is cited to show optical repeater.

Kidorf (US Patent No. 6,028,684) is cited to show path to provide OTDR measurements of an optical transmission system that includes optical isolators.

Fisher et al (US Patent No. 6,075,628) is cited to show fault location in optical communication system.

Leterllier et al (WO 99/12287) is cited to show optical transmission system with coherent optical time domain reflectometry.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is 703-306-5619. The examiner can normally be reached on Mon-Fri 8am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DS

August 19, 2004



JASON CHAN
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